

## **REMARKS**

Claims 1-4, 7-12, 14-15, 24-25, 27-38, 41-42, 47-52, 70-86, 88-90, 92-97, 100-111, 119-120, 122-124, 131-134, 139-146, 149-150, 155-160, 178-186, and 200 are now pending in the application. Claims 5-6, 13, 16-23, 26, 39-40, 43-46, 53-69, 87, 91, 98-99, 112-118, 121, 125-130, 135-138, 147-148, 151-154, 161-177, and 187-199 are cancelled. Independent Claim 200 has been added and Claims 139, 141, 143, 145, and 149 have been amended to depend thereupon.

At the time of filing, fees were paid for 6 independent claims and 199 total claims. During subsequent prosecution, 2 independent claims and 93 total claims were cancelled. As such, Applicants believe that no additional fees should be due for newly introduced independent Claim 200 under either 37 C.F.R. § 1.16(h) or 1.16(i). If any additional fees are determined to be due pursuant to 37 C.F.R. §§ 1.16 or 1.17; however, the Commissioner is hereby authorized to charge any such fees to Deposit Account No. 07-0960.

Further, independent Claim 111 has been amended as have dependent Claims 119-120, 122-124, 140, 142, 144, 146, 150, and 155-160. Support for these amendments is found throughout the specification and claims as originally filed, thus no new matter has been added. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## **ALLOWABLE SUBJECT MATTER**

The Office Action states that Claims 1-4, 7-12, 14-15, 24-25, 27-38, 41-42, 47-52, 70-86, 88-90, 92-97 and 100-110 are allowed. Further, Claims 119, 120 and 178-186 are

objected to as based on a rejected parent claim; however would be allowable if rewritten in independent form. Applicants thank the Examiner for the indication of allowable subject matter.

With regard to the objection of Claims 178-186, Applicants request the Examiner's reconsideration, since Claim 178 is itself an independent claim directed to a method of producing a source of hydrogen gas (by liberating hydrogen from a solid hydrogenated state comprising a hydride and a dehydrogenated hydroxide selected from LiOH, NaOH, Be(OH)<sub>2</sub>, Mg(OH)<sub>2</sub>, Ca(OH)<sub>2</sub>, Sr(OH)<sub>2</sub>, Ti(OH)<sub>2</sub>, Al(OH)<sub>3</sub>, and mixtures thereof). The subject matter of independent method Claim 178 (as well of its dependent claims) is similar to that of allowed method Claim 25, for example.

Further, the subject matter of Claims 119-120 has been commonly incorporated into independent Claim 111, thus, the Examiner's reconsideration of Claim 111 is respectfully requested, as discussed in more detail below. In view of the amendments to the claims, Applicants respectfully submit that all of Claims 1-4, 7-12, 14-15, 24-25, 27-38, 41-42, 47-52, 70-86, 88-90, 92-97, 100-111, 119-120, 122-124, 131-134, 139-146, 149-150, 155-160, 178-186, and 200 are now in condition for allowance.

#### **REJECTION UNDER 35 U.S.C. § 112**

Claims 139-146, 149-150 and 155-160 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed. Claims 139-146 and 149-150, and 155-160 have each respectively been amended to be directed to a composition, thus providing proper antecedent basis to the

independent claims from which they depend (independent Claims 111 or 200 directed to hydrogen storage compositions). As such, Applicants respectfully submit that amended Claims 139-146, 149-150 and 155-160 are definite and that the rejection is now moot and should be withdrawn.

**REJECTION UNDER 35 U.S.C. § 103**

Claims 111-113, 117-118, 122-124, 131-138 and 187-189 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. (U.S. Pat. No. 6,471,936) (hereinafter "*Chen*"). In furtherance of prosecution, Claims 112-113, 117-118, 135-138, and 187-189 have been cancelled; thus the rejection is now moot with respect to these cancelled claims. For remaining Claims 111, 122-124, and 131-134, this rejection is respectfully traversed.

Independent Claim 111 has been amended to recite a hydrogen storage composition that in a hydrogenated state has a hydride or a dehydrated hydroxide comprising a complex cationic species. More specifically, amended Claim 111 recites that the hydride is represented by  $MI^xH_x$  and the dehydrated hydroxide represented by  $MII^y(OH)_y$ , where at least one of MI or MII is a complex cationic species comprising two distinct cationic species other than hydrogen selected from the group consisting of Al, As, Ba, Be, Ca, Cd, Ce, Cs, Cu, Eu, Fe, Ga, Gd, Ge, Hf, Hg, In, La, Li, Mg, Mn, Na, Nd, Ni, Pb, Pr, Rb, Sb, Sc, Se, Si, Sm, Sn, Sr, Th, Ti, Tl, V, W, Y, Yb, Zn, Zr, and mixtures thereof.

In the Office Action, Claims 119 and 120, which depend upon Claim 111, were indicated to contain allowable subject matter. Claims 119 and 120 respectively recite that that MI and/or MII is a complex cationic species comprising two distinct cationic

species other than hydrogen, thus Claim 111 has been amended to incorporate such a feature of either the hydride and/or dehydrated hydroxide including such a complex cationic species. Thus, Claim 111 and its dependent Claims 119-120, 122-124, 131-134, and 155-160 should now be in condition for allowance.

Newly added Claim 200 is directed to a hydrogen storage composition, where in a hydrogenated state the composition comprises a hydride represented by  $MI^xH_x$  and a dehydrated hydroxide represented by  $MII^y(OH)_y$ , where MI and MII respectively represent one or more cationic species other than hydrogen that are selected from the group consisting of Al, Be, Ca, Mg, Sr, and mixtures thereof. Claims 139-146 and 149-150 have been amended to depend upon independent Claim 200. The Chen reference has no teaching or suggestion of hydrogen storage compositions that have a hydrogenated state and a dehydrogenated state, where MI and MII are selected from Al, Be, Ca, Mg, and/or Sr. As such, the compositions of Claim 200 and its dependent Claims 139-146 and 149-150 are non-obvious over the prior art. As such, Applicants respectfully submit that all pending claims (Claims 1-4, 7-12, 14-15, 24-25, 27-38, 41-42, 47-52, 70-86, 88-90, 92-97, 100-111, 119-120, 122-124, 131-134, 139-146, 149-150, 155-160, 178-186, and 200) are patentable over the prior art and should be in condition for allowance.


## CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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